REMARKS

In the February 4, 2003, Office Action, the Examiner rejected Claims 1-27 under 35 U.S.C. §103(a) and objected to Claim 6. Initially, regarding the objection to Claim 6, applicant submits that the intent in the prior amendment (paper number 9) was to amend (not cancel) Claim 6. Applicant thanks the Examiner for calling this issue to his attention.

Next, with respect to the Examiner's §103 rejections, Claims 1-6, 8, 16-17, 20 and 23-27 were rejected as being unpatentable over Bertsch *et al.,* U.S. Patent No. 6,359,275 ("Bertsch"), in view of Ikebe, Japanese Patent No. 52-66488 ("Ikebe"). Applicant respectfully submits that the Examiner's reliance on Bertsch and Ikebe is misplaced. Neither Bertsch nor Ikebe, either alone or in combination, teach all of the limitations of the claimed invention. In particular, applicant would like to direct the Examiner's attention to applicant's novel idea for a multiple part capillary comprising at least two capillary sections that are removably joined with an airtight seal by a union for use in mass spectrometry to transfer ions from an ion source to the vacuum system of the mass spectrometer. Further, any rejection based on these cited references could only have been made with the benefit of the teaching of applicant's own specification, and is the result of hindsight reconstruction of the applicant's invention.

Briefly, as suggested by the Examiner, Bertsch discloses "an apparatus for transporting ion [sic] from an ionization source region (14) to a first pressure region (16) within a mass spectrometer" with such apparatus or conduit comprising a single capillary 54 and two endpieces 56. However, it is apparent that Bertsch clearly teaches away from the claimed invention. In particular, conductive sleeve 60 according to Bertsch is not and cannot provide a removable interface between capillary tube 54 and endpiece 56. In fact, Bertsch does not even suggest that conductive sleeve 60 is capable of joining capillary 54 with

endpiece 56, but rather teaches the "application of an adhesive such as an epoxy at the juncture between the endpiece and the capillary" to join these pieces. (Col. 5, ln. 66 through col. 6, ln. 6). Nowhere does Bertsch suggest use of anything resembling the removable interface as claimed.

Further, the Examiner relies on Ikebe as a teaching of "a union (3,7,13) being configured to removably interface the first and second capillary sections (2c, 6)." Applicant again disagrees. Upon careful review of Ikebe, it is clear that element 7 is merely a shrink tube, element 3 is merely a glass tube and element 13 is merely a column adapter -- none of which suggest a removable connection. Further, as shown and described in the drawings and abstract of Ikebe, the interface at element 7 does not removably join any first and second capillary sections such that an airtight seal is provided between an ionization source region and a first pressure region of a mass spectrometer as claimed.

In short, the combination of Bertsch and Ikebe asserted by the Examiner fails to disclose each and every element of the claimed invention. In particular, neither Bertsch nor Ikebe disclose a union configured to removably interface the first and second capillary sections as claimed and disclosed. Therefore, even if such a combination were proper, it still would not teach or suggest the claimed invention. As demonstrated above, Bertsch even teaches away from such a combination. Therefore, any rejection based on the cited references could only have been made with the benefit of the teaching's of applicant's own specification, and could only be the result of hindsight reconstruction of the applicant's invention.

Next, the Examiner rejected claims 19 and 21 under 35 U.S.C. §103(a) as being unpatentable over Bertsch in view of Ikebe and further in view of Sharp. Because Claim 19 and 21 depend from independent Claim 16, neither Bertsch nor Ikebe teach or suggest the invention claimed therein for the reasons stated above. In addition, Sharp similarly fails to disclose a union configured to removably interface first and

second capillary sections as claimed and disclosed. Thus, the combination of Bertsch, Ikebe and Sharp asserted by the Examiner also fails to disclose each and every element of the invention claimed in Claim 19 and 21.

Finally, the Examiner rejected claims 1, 2, 12, 16-18 and 22 under 35 U.S.C. §103(a) as being unpatentable over Sproch in view of Henion. In brief, Sproch discloses a removable ESI probe that comprises a capillary tube 54 having an upstream entrance orifice 56 and a downstream exit orifice 58. (See col. 6, lns. 7-13 and col. 7, lns. 10-25). However, Sproch fails to disclose a capillary composed of first and second sections or a union configured to removably interface such capillary sections.

Henion on the other hand discloses a T-shaped connector for connecting an electrophoresis capillary to a sprayer tube which leads to the atmospheric pressure ionization source of a mass spectrometer. (See Fig. 1 and col. 3, lns. 13-27). In his rejection, the Examiner states that "Henion teaches a sealing mechanism for the removable interface between the ion source and mass spectrometer." Applicant disagrees. Specifically, Henion does not relate to the transfer of ions from an ion source to the vacuum system of the mass spectrometer. Rather, the interface 10 of Henion connects an electrophoresis capillary to a sprayer tube which leads to the atmospheric pressure ionization source of a mass spectrometer (i.e., outside the vacuum system of the mass spectrometer).

Therefore, the combination of Sproch and Henion asserted by the Examiner, if proper, fails to teach or suggest the use of a union configured to removably interface multiple sections of a capillary as claimed. Further, any rejection based on these references could also only have been made with the benefit of the teaching's of applicant's own specification, and the result of hindsight reconstruction of the applicant's invention.

We are confident that the Examiner will recognize that the rejection of these claims in view of the cited references, either alone or in combination, was made with the benefit of the teachings of applicant's specification, and could only be the result of hindsight reconstruction of the applicant's own invention. Any combination of the references clearly does not teach or suggest applicant's claimed invention. Specifically, non of the references suggest a multiple part capillary for use in mass analysis instruments comprising at least two capillary sections removably joined with an airtight seal by a union for use in mass spectrometry. Such a novel device is beneficial for the transportation of ions between pressure regions in a mass spectrometer where the capillary sections are removably secured with the union. This provides a dramatic improvement over the conventional mass spectrometer capillary technology, and the cited references neither teach nor suggest the novel and non-obvious features of this invention.

CONCLUSION

In view of the foregoing, applicant respectfully submits that the present invention represents a patentable contribution to the art and the application is in condition for allowance. Early and favorable action is accordingly solicited.

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Respectfully submitted,

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